

Aero Design Ltd.**Work Order Control Sheet**Work Order#: 2015-114 Date Opened: 26-Oct-15 Title: AssemblyAircraft OEM: Bell Aircraft Model: 407 Product Type: Cargo Basket Product Model: High Ski Quantity: 1**Work Order Contents**

Work Order/Build Sheets (Procedures Provided)
Additional Work Sheets (Standard Practice)
Drawings (See List Below)
Parts Distribution Sheet
Sub Component Tags
Completed Certification
Time Sheet (R&D)
Notes

Initial or N/A

JR
N/A
JR
JR
JR
JR
N/A
N/A

Build Sheet Contents

Tasks Initialled
Dual Inspections Initialled

Initial or N/A

JR
JR

Drawing List

Drawing #	Rev #	Description	Initial or N/A
76610	0	Basket	JR
76611	0	Body	JR
60632	0	Lid	JR
76621	0	Fwd Mount Hoop	JR
76622	0	Aft Mount Hoop	JR
76623	0	Regular Hoop	JR
76625	0	Placard	JR

Traveller

Install walkway on lid
Install lid on basket body
Re-tap mounting lug holes and install mount lugs
Install handle brackets
Install handle
Install lid prop
Install data plate

Initial or N/A

JR
JR
JR
JR
JR
JR
JR

Work performed by:

Print: J Rekve for M RekveSign: Jason Rekve

ICC / Dual Inspection performed by:

Print: Jason RekveSign: Jason Rekve

Work Order closed by:

Print: Jason RekveSign: Jason Rekve

Approved Manufacturing Facility 73-04

Form 20.D.03

Component Completion

Quantity Complete on This Work Order
Quantity Incomplete on This Work Order
Further Processing Required Before Release
Release to Stock as Components

As Instructed

1
N/A
N/A
N/A

Certification

Form One Completed
Serviceable (Green) Tag Completed
In Process (Yellow) Tag Completed
Unserviceable (Red) Tag Completed
Parts Placed in Stores for Distribution

Initial or N/A

JR
N/A
N/A
N/A
N/A

Additional Documentation

Documentation of a minor change
Non-Conformance Report Required
Service Difficulty Report Required

Initial or N/A

N/A
N/A
N/A

Billing

Local (Aero Design)
Research and Development
Third Party

Initial or N/A

JR
N/A
N/A

SCA: AD01Date: 26-Oct-15SCA: AD01Date: 26-Oct-15SCA: AD01Date: 26-Oct-15

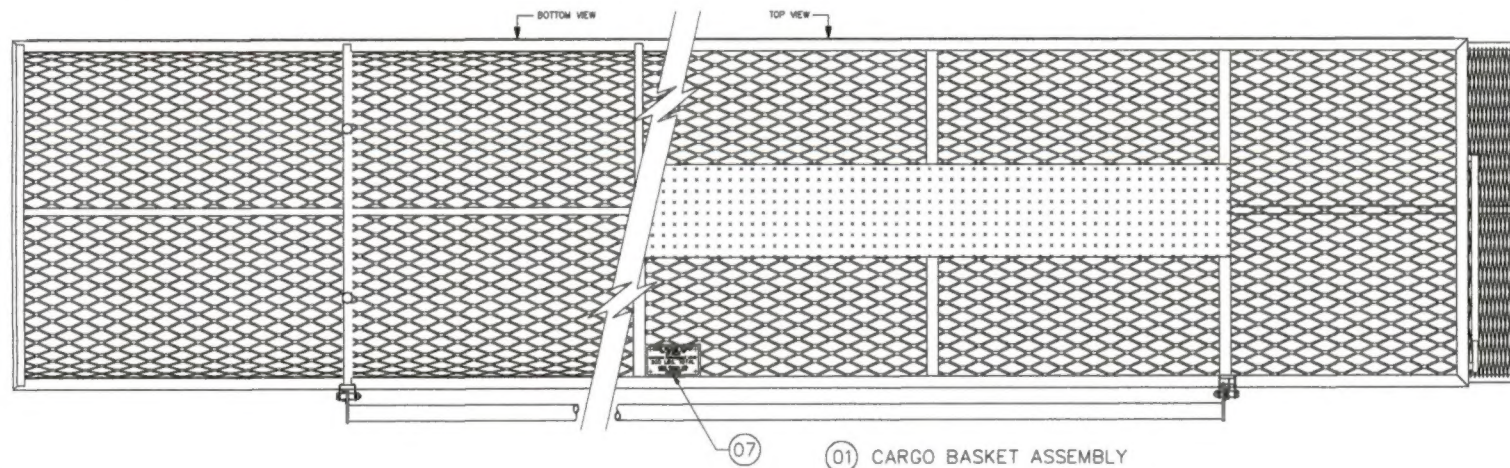
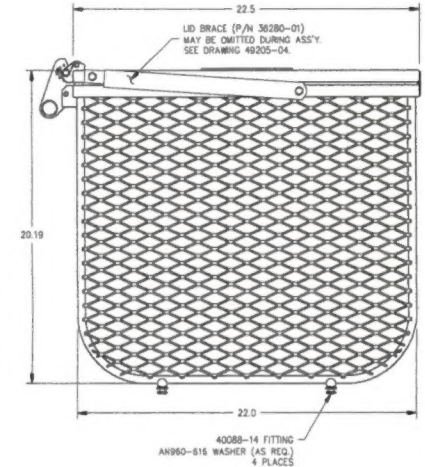
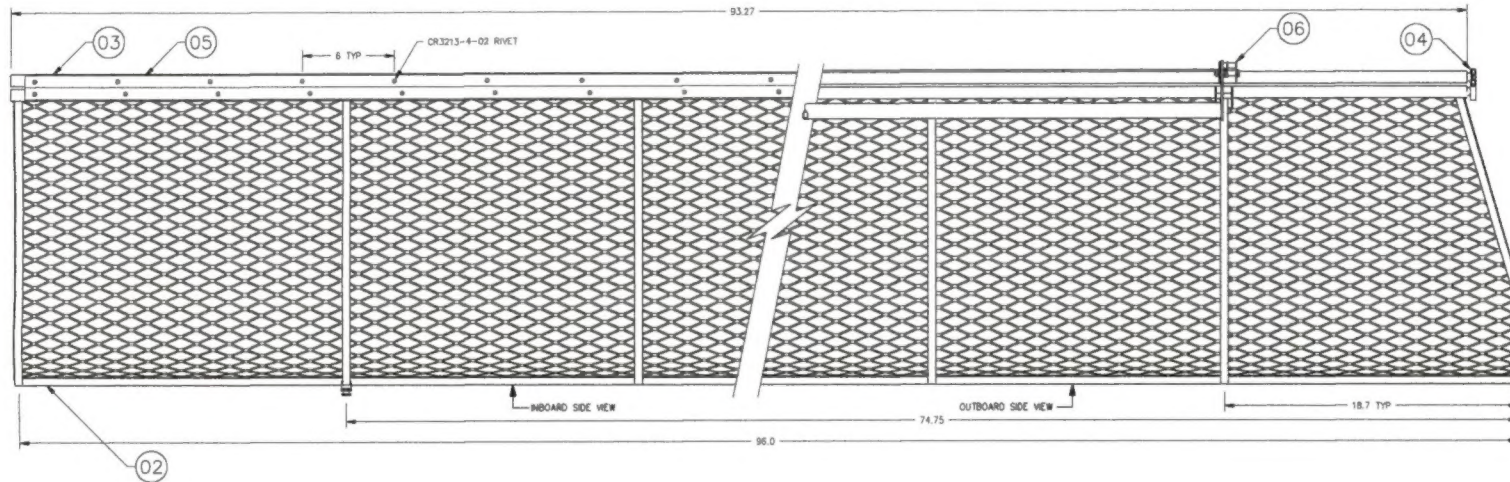
Rev. Original 23 Sep 2014

Description: Beam Pin

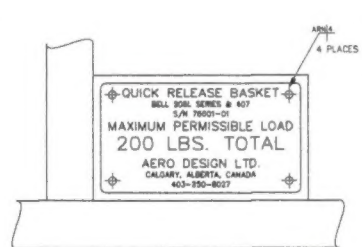
[illegible]

2015-114

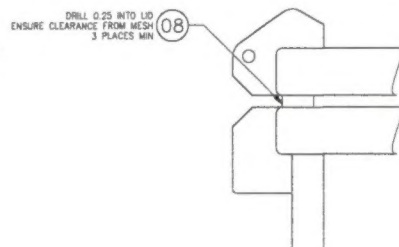
REV		DESCRIPTION OF CHANGE	INITIALS	DATE
0		CREATED FROM 60830	BJC	SEPT 25/07



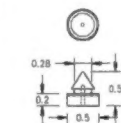
NOTE:
1. ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY. DIMENSIONS OF COMPONENTS AND COMPLETE ASSEMBLY ARE DETERMINED IN PREVIOUS STEPS.



DETAIL B
SCALE 1 : 1
LOOKING AT PLACARD BRACKET



BUMPER INSTALLATION
SCALE 1 : 1

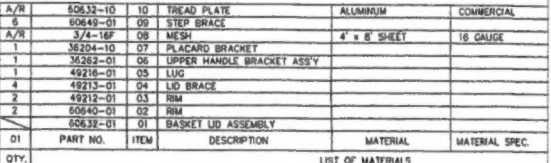


BUMPER
SCALE 1 : 1

01 CARGO BASKET ASSEMBLY

QTY.	PART NO.	ITEM	DESCRIPTION	MATERIAL
1	CR3213-4-02	CHERRY RIVET		
1	AN980-816	WASHER		
1	40088-14	FITTING		ANORA
1	49205-14	BUMPER		ARGUS INDUSTRIES
1	76625-01	07 PLACARD		
1	36255-01	06 HANDLE BAR INSTALLATION		
1	M520001P4	05 PLANO HINGE		
1	36256-01	04 BRACE INSTALLATION		
1	40632-01	03 LID ASSEMBLY		
1	76611-01	02 BASKET BODY ASSEMBLY		
1	76610-01	01 CARGO BASKET ASSEMBLY		

APPROVALS		DATE	AERO DESIGN LTD.	
DRAWN:	JEFF CLARKE	25 SEPT 2007	CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 690M	
CHECKED:	E. BURROON		2018 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7	
UNLESS OTHERWISE SPECIFIED			tel: (403) 850-8027 fax: (403) 850-8028 aerd@adgo.ca	
DIMENSIONS ARE IN INCHES.			BELL 407, 206L SERIES	
TOLERANCES ON:			QUICK RELEASE HIGH MOUNTED CARGO BASKET ASSEMBLY	
DECIMALS		ANGLES	SCALE 1 : 4	
X.XXX ±0.010		±1/2"	DWG. SIZE	
X.XX ±0.03			REV.	
X.X ±0.1			SHEET 1 OF 1	
LIST OF MATERIALS			A1 76610 0	



APPROVALS		DATE	AERO DESIGN LTD. CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAB 2908 2015 - 50TH AVENUE, N.E., CALGARY, ALBERTA, CANADA, T2E 6K7 Tel: (403) 250-8057 info@aerodesignltd.com		
DRAWN: JEFF CLARKE		12 AUG 2004	BELL 407, 206L SERIES HIGH SIDE MOUNTED CARGO BASKET CARGO BASKET LID ASSEMBLY		
CHECKED: E. BURGIN					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:		ANGLES			
DECIMALS		±1/2"			
X.XXX ±0.010					
X.XX ±0.03					
X.X ±0.1					
		SCALE 1 : 4	DWG. NO.	DWG. NO.	REV.
		SHEET 1 OF 1	A1	60632	0

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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
1			

NOTES

- ENGRAVE 0.007 DEEP AS FOLLOWS:
 "QUICK RELEASE BASKET" - 0.125 HIGH
 "BELL 206L SERIES & 407" - 0.080 HIGH
 "S/N 76601-XX" - 0.080 HIGH
 "MAXIMUM PERMISSIBLE LOAD" - 0.125 HIGH
 "200 LBS. TOTAL" - 0.200 HIGH
 "AERO DESIGN LTD." - 0.125 HIGH
 "CALGARY, ALBERTA, CANADA" - 0.080 HIGH
 "403-250-8027" - 0.080 HIGH

DRILL #30 (0.129)
4 PLACES



(01) PLACARD

1	76625-01	01	PLACARD	6061-T6 ALUMINUM	QQ-A-250/11	0.063 SHEET
01	PART NO.	ITEM	DESCRIPTION	MATERIAL	MATERIAL SPEC	STOCK SIZE
QTY	LIST OF MATERIALS					
			APPROVALS	DATE	AERO DESIGN LTD. CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M 2013 - 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7 tel: (403) 250-8027 fax: (403) 250-8333 aerodesign@telusplanet.net	
			DRAWN: JEFF CLARKE	26 SEPT 2007		
			CHECKED: E. BURGAIN			
			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS ANGLES X.XXX ±0.010 ±1/2" X.XX ±0.03 X.X ±0.1		BELL 206L SERIES AND 407 QUICK RELEASE HIGH MOUNTED CARGO BASKET PLACARD	
			SCALE 1 : 1	DWG. SIZE	DWG. NO.	REV.
			SHEET 1 OF 1	A1	76625	0

Aero Design Ltd.

9888 A Malaspina Rd., Powell River, BC
V8A 0G3, 604-483-AERO (2376)

Quantity:

1

PN:

Aluminum Checker plate

Aircraft:

All

Model: All

Description:

5 7/8" x 10', .065", pattern c102

Supplier:

Daigle Marine

Color:

N/A

WO#:

N/A

PO# 15056



Aero Design Ltd.

9888 A Malaspina Rd., Powell River, BC
V8A 0G3, 604-483-AERO (2376)

Quantity: 1

PN: MS20001P4-7200

Aircraft: All Model: All

Description: Hinge

Supplier: Aircraft Spruce

Color: N/A

WO#: N/A

PO# 15063

Aero Design

Parts Distribution Sheet

Description: Handle Bar Installation Kit

WO# _____

[illegible]

CARGO BASKET ASSEMBLY - COMMON

Complete
(initial or SCA #)

Work Order: 2015-114

76601-21

Date Open: 26 Oct 15

ADOG

1. Lid Assembly

- a. Install lid bumpers on bottom.
 - i. Fill bumper holes with RTV silicone sealant.
 - ii. Insert 49205-14 lid bumper, 3 or 4 places per lid.
- b. Install placard on bracket on top of lid.
 - i. Locate placard on bracket.
 - ii. Drill #30 through placard and bracket, using holes in placard.
 - iii. Remove placard and de-burr holes in placard and on bracket.
 - iv. Locate placard on bracket, and cleco in place.
 - v. Rivet placard with four CR3213-4-02 CherryMax rivets.
- c. Option: Install walkway on top of lid (lid must be fitted with walkway provisions)
 - i. Note: avoid touching surface of tread plate with bare hands to prevent smudges or marks on the top surface.
 - ii. Pull tread plate from stock. Shear tread plate to length.
 - iii. De-burr edges of tread plate with scotch-brite disc on die-grinder.
 - iv. Locate tread plate on lid. Hold tread plate in place with bags of lead shot.
 - v. Mark and drill #30 holes:
 1. 0.25" from edge of tread plate, centre on cross members (0.38")
 2. 0.25" from edge of tread plate, middle of each walkway stringer
 - vi. De-burr and counter-bore (if required to provide clearance of rivet head on checker pattern) all holes in tread plate using 1/4" piloted counter bore on both sides.
 - vii. De-burr holes in lid tubes.
 - viii. Apply bead of RTV silicone sealant along all tubes under tread plate.
 - ix. Set tread plate in place, secure with clecos if necessary.
 - x. Rivet placard with CR3213-4-02 CherryMax rivets
- d. Record PO/WO of all parts (including lid) used in steps above on attached material tracking list.

2. Body Assembly

ADOG

- a. Install attachment fittings
 - i. Carefully remove excess powder coat from around attachment lug threads using a countersink.
 - ii. Run 3/8-24 tap into attachment lugs to clear threads.
 - iii. Apply anti-seize compound to attachment fittings 96710-01 (alternate: Ancra 40088-14)
 - iv. Install attachment fittings with two NAS1149F0363P washers in four lugs in basket.
 1. 90610 (Robinson R44) basket only:
 - a. Install 1 fitting 906?? in lower forward attachment lug only.
 - b. Install 3 96710-01 fittings in remaining locations.
 - v. Torque to ??

- b. 946 Basket Only: Install Cutout Brace – *must be completed after hinge installation*
 - i. Locate 94621-01 Brace over aft cross tube cutout
 - ii. Install two AN4-6A bolts and two AN4-30A bolts with NAS1149F0463P washers.
 - iii. Torque AN4 bolts to ??
- c. Record PO/WO of all parts (including basket) used in steps above on attached material tracking list.

3. Hinge Installation 2006

- a. Prepare hinge.
 - i. Cut hinge to length:
 - 1. 776, 906 – 54"
 - 2. 751, 803 – 70"
 - 3. 698, 764, 945 – 72"
 - 4. 784 – 90"
 - 5. 940, 946, 959 – 95"
 - ii. Drill #30 pilot holes using hinge jig. For long hinges, flip at specified location on jig.
- b. Install hinge on basket
 - i. Locate hinge on basket (standard baskets)
 - 1. centre fore/aft
 - 2. 0.15" – 0.18" up from bottom edge
 - ii. Locate hinge on basket (extra wide baskets)
 - 1. centre fore/aft
 - 2. set hinge at 90 degrees (as if lid would be installed) using a small square, locate vertical side at 22.5" from outboard edge.
 - iii. Drill #30 through holes in hinge into basket rim. Cleco in place with 1/8 (copper) clecos.
 - iv. Drill holes up to #21 through hinge and rim. Replace 1/8 clecos with 5/32 (black) clecos.
 - v. Remove hinge and de-burr holes in hinge and basket rim.
 - vi. Cleco hinge to basket with 5/32 clecos.
 - vii. Install hinge with CherryMax rivets
 - 1. CR3523-5-02 monel rivets – last 2 rivets in each end
 - 2. CR3213-5-02 aluminum rivets – all other locations
- c. Install lid on basket
 - i. Locate lid on hinge (all baskets)
 - 1. center fore/aft
 - 2. 0.15" – 0.18" down from top edge
 - ii. Drill #30 through holes in hinge into lid rim. Cleco in place with 1/8 clecos.
 - iii. Drill holes up to #21 through hinge and rim. Replace 1/8 clecos with 5/32 clecos.
 - iv. Remove hinge and de-burr holes in hinge and lid rim.
 - v. Cleco lid to hinge with 5/32 clecos.
 - vi. Install hinge with CherryMax rivets
 - 1. CR3523-5-02 monel rivets – last 2 rivets in each end
 - 2. CR3213-5-02 aluminum rivets – all other locations

- d. Record PO of hinge and rivets on attached material tracking list.

4. Install Handle

A006

- a. Install handle brackets.
- Set 84267-01 handle bracket on provisions in hoops, 2 places.
 - Install AN3-11A bolt, NAS1149F0363P washer (2), MS21044N3 nut. Two places per bracket, two brackets per basket.
 - Torque AN3 bolts to ??.
- b. Install handle
- Trim 36278-01R and 36278-01L springs to ensure end of spring does not extend past edge of handle bracket, approximately 1/8". Set springs over bushing of 84261-01 handle assembly.
 - Grease two 36275-01 bushings with ??. Insert into bushings of handle assembly.
 - Locate handle on basket lid. Insert AN3-12A bolt with NAS1149F0363P through bracket on lid and handle bushing on one end of handle.
 - On other end of handle, hook spring over catch rivet on handle assembly and use spring tool to twist spring to catch arm on bracket on lid while inserting AN3-12A bolt with NAS1149F0363P washer through lid bracket and handle bushing.
 - At first end, remove bolt and repeat step iv.
 - Install NAS1149F0363P washer and MS21044N3 nut on both AN3-12A bolts.
 - Torque AN3 bolts to ??.
- c. Check handle
- Operate handle to ensure handle does not bind and springs hold handle in.
 - Snap handle into brackets to ensure handle locks.
- d. Record PO/WO of all parts used in steps above on attached material tracking list.

5. Install lid brace

A006

- a. Locate 36280-01 lid brace on bushing in basket. Ensure brace is on forward end of basket as it will be installed on the helicopter.
- b. On lid end, insert AN970-3 washer into end of lid brace. Insert AN3-15A bolt with NAS1149F0363P washer through AN970-3 washer, lid prop, and lid bushing. Install NAS1149F0363P washer and MS21044N3 nut on bolt.
- c. On basket end, insert AN3-17A bolt with AN970-3 washer through lid prop and basket bushing. Install NAS1149F0363P washer and MS2144N3 nut on bolt.
- d. Ensure brace is seated on lip of bushings before tightening nuts.
- e. Torque AN3 bolts to ??
- f. Record PO/WO of all parts used in steps above on attached material tracking list.

CARGO BASKET ASSEMBLY - COMMON

Complete
(initial or SCA #)

6. Final Inspection

Dual inspection by a different person than assembled the basket.

- a. Check for general condition and correct assembly:
 - i. Bolts are tight
 - ii. Rivets are installed correctly
 - iii. Handle operates correctly
 - iv. Lid brace operates correctly
- b. Check that PO/WO numbers have been recorded.

OK

CARGO BASKET HANDLE FABRICATION

General

These instructions apply to all cargo basket handle assemblies. Refer to the following drawings, at the current revision, for dimensions and details:

All Models: 84261, Rev. 1

Work Order: 2015-114

Complete
(initial or SCA #)

Date Open: 26 Oct 15

AD-05

1. Weld Lever Assembly – handle lever jig required
 - a. Set MS20615-4M3 monel rivet into socket in jig
 - b. Set 36274-01 bushing into socket in jig
 - c. Set 84261-01 lever onto handle jig, with rivet and bushing protruding into lever.
 - d. TIG weld around bushing using ER308L rod.
 - e. Fuse weld rivet to lever. Additional ER308L rod may be used if required.
 - f. Repeat steps a-f using hole/socket on opposite side of jig to make opposite lever assembly.
 - g. Record material POs on attached material list.

2. Clean up
 - a. Clean lever assembly by media blasting with glass bead.
 - b. Drill out lever bushing to O (0.316) on lathe:
 - i. Grasp bushing in chuck, ensure rivet clears between the jaws.
 - ii. Run at 300 RPM.
 - iii. Apply a drop of Rapid-Tap to drill.
 - c. De-burr.

3. Fabricate Handle Assembly
 - a. Temporarily install handle levers (from step 2) on lid assembly. Ensure long side of handle bushings are on INSIDE (pointing together).
 - b. Measure across TOP side of levers.
 - c. Cut handle tubing to length measured.
 - i. Handles under 40" long: 1.0" x 0.035 round tube
 - ii. Handles over 40" long: 1.0" x 0.065 round tube
 - d. De-burr tube.
 - e. Insert tube into handle levers. Tap with a plastic mallet to seat tube flush with lever. Raise handle to ensure both levers touch stops to check alignment.
 - f. Record material PO on attached material list.

AD06

4. Weld Handle Assembly
 - a. Fuse tube to lever on both ends. Ensure levers are parallel.

AD-05

5. Clean up
 - a. Clean welded area with scotch-brite.

AD06

6. Final Inspection –

To be completed by a different person than the previous steps.

 - a. Welds for complete and handle for fit.
 - b. Tag complete and inspected parts in preparation for installation.

OK